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EXAMINER PHILLIPS, HASSAN A				
ART UNIT		PAPER NUMBER		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@fbtlaw.com

# Office Action Summary

Application No.

09/764,662

Applicant(s)

GHEITH ET AL.

Examiner

HASSAN PHILLIPS

Art Unit

2151

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 57-112 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 57-112 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)

Paper No(s)/Filing Date: 6/6/08

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This action is in response to communications filed June 20, 2008.

***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 20, 2008, has been entered.

***Information Disclosure Statement***

3. The information disclosure statement filed August 8, 2008, has been received and considered by the examiner.

***Specification***

4. In light of the amendments made to the specification to provide proper antecedent basis for the claimed subject matter, examiner has withdrawn the objection to the specification.

***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 85 and 111 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Applicant has amended the specification to define "computer readable media" to include "plain paper". Use of current technology does not permit the function of instructions included on plain paper to be realized. The claims therefore lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." Both types of "descriptive material" are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994).

***Response to Arguments***

7. Applicant's arguments filed June 20, 2008, have been fully considered but they are not persuasive. Applicant argued:

- a) Allen cannot properly be used as the basis for rejecting claims 61, 62, 91, and 92, because it does not disclose how copies of a user's session state information are updated, whether by modifying a previously stored session state (as recited in claims 61 and 91), by deleting a previously stored session state and creating an updated session state (as recited in claim 62 and 92) or through some other method entirely; and,
- b) there is no indication anywhere in Allen that such an identification might comprise the first and second identifiers specified by claim 101.

Examiner respectfully disagrees with applicants assertions.

8. With regards to a), examiner maintains Allen can properly be used as the basis for rejecting claims 61, 62, 91, and 92, because Allen teaches "[t]he copies of the users' session-state information are updated whenever that information changes", (col. 4, lines 12 and 13). In giving the claims their broadest reasonable interpretation, these teachings inherently suggest modifying a previously stored session state as recited in claims 61 and 91, because the previously stored session state will have to either be moved to a new location or deleted from the server all together in order to be "updated". Similarly, in giving the claims their broadest reasonable interpretation, these teachings inherently suggest deleting a previously stored session state and creating an updated

session state as recited in claims 62 and 92, because the previously stored session state will have to either be moved to a new location (i.e. deleted from its old location) or deleted from the server all together in order to be "updated".

9. With regards to b), examiner submits the teachings of Allen clearly suggest first and second identifiers as specified by claim 101 since Allen teaches "different Web servers in the farm may service subsequent request from the same user", (col. 3, lines 66 and 67), "the servers must be able to communicate with each other and share session-state information", (col. 4, lines 5 and 6), and "[t]he copies of the users' session-state information are updated whenever that information changes", (col. 4, lines 12 and 13). These teachings inherently suggest first and second identifiers as specified by claim 101, because without first and second identifiers, different Web servers in the farm would not be able service subsequent requests from the same user.

10. Accordingly the references supplied by the examiner in the previous office action covers the claimed limitations recited in claims 61, 62, 91, and 92. The rejections are thus sustained. Applicant is requested to review the prior art of record for further consideration.

11. Applicant's arguments with respect to the remaining claims have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 57-70, 74-83, 85-96, 100-109, 111, 112, are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen, U.S. Patent, 6,877,095, in view of Potts, Jr. et al. (hereinafter Potts), U.S Patent 6,516,339.

14. In considering claims 57 and 85, Allen discloses a system and a corresponding method for maintaining a session state in a plurality of server computers (120) forming a server computer group, wherein the server computer group comprises a first server, a second server, and a third server, wherein each server of the server computer group is configured to interact with a customer (102), the method comprising: (a) creating a first session state for the customer, wherein at least a portion of the act of creating a first session state is performed on the first server, wherein the first session state corresponds to a first interaction between the customer and the first server, (col. 2, lines 57-60 and col. 3, lines 52-57, also see Fig. 1); (b) storing the first session state in the first server, (col. 3, lines 52-57); (c) transmitting data relating to the first session state to the second server and the third server, wherein at least a portion of the act of transmitting data relating to the first session state is performed by the first server, (col.

4, lines 1-6); (d) creating the first session state in the second server and the third server in accordance with the transmitted data relating to the first session state, wherein the act of creating the first session state in the second server and the third server includes storing the first session state in the second server and the third server, (col. 4, lines 1-11); and (e) updating the first session state to create an updated session state, wherein at least a portion of the act of updating the first session state is performed by the second server, wherein the act of updating the first session state to create an updated session state results in the updated session state being stored on the second server, wherein the updated session state corresponds to a second interaction between the customer and the second server, wherein the second interaction occurs subsequent to the first interaction, (col. 4, lines 1-13).

Although the teachings of Allen disclose substantial features of the claimed invention, they fail to expressly disclose: storing the first session state via a server interface thread on the first server, or transmitting the data to the second and third servers via a command publisher thread.

Nevertheless, interface threads and publisher threads were well known in the art at the time of the present invention. This is evidenced in the teachings of Potts where Potts discloses a server interface thread for storing a file being edited by a client, (col. 2, lines 60-64, col. 3, lines 53-56), and a command publisher thread used by a client to communicate with a server that will handle a command from the client, (col. 3, lines 24-27, col. 4, lines 25-47).



Thus, it would have been obvious to one of ordinary skill in the art to modify the teachings of Allen to expressly disclose storing the first session state via a server interface thread on the first server, and transmitting the data to the second and third servers via a command publisher thread. As was known in the art, this would have advantageously provided multithreaded processing in the first server, thereby enabling multi-tasking functionality, (Potts, col. 3, lines 63-65).

15. In considering claim 58, Allen further discloses (a) transmitting data relating to the updated session state to the first server and the third server, wherein at least a portion of the act of transmitting data relating to the updated session state is performed by the second server, (col. 4, lines 1-6); and (b) creating the updated session state in the first server and the third server in accordance with the transmitted data relating to the updated session state, wherein the act of creating the updated session state includes storing the updated session state in the first server and the third server, (col. 4, lines 1-11).

16. In considering claim 59, Allen further discloses (a) transmitting an update to the first server and the third server, wherein at least a portion of the act of transmitting an update is performed by the second server, (col. 4, lines 1-13); and receiving the update, wherein the update is received by the first server and the third server, wherein the act of creating the updated session state in the first server and the third server is performed in response to the update, (col. 4, lines 1-13).

Furthermore, Allen also discloses the servers must be able to communicate with each other and share session-state information, (col. 4, lines 5 and 6).

Although the teachings of Allen disclose substantial features of the claimed invention, they fail to expressly disclose: the update including an update command, and receiving the update command via a subscriber thread.

Nevertheless, an update including an update command, and receiving an update command via a subscriber thread was well known in the art at the time of the present invention. This is evidenced in the teachings of Potts where Potts teaches an update including an update command, and receiving the update command via a subscriber thread, (col. 2, lines 60-64, col. 3, lines 53-56).

Thus, it would have been obvious to one of ordinary skill in the art to modify the teachings of Allen to expressly disclose the update including an update command, and receiving the update command via a subscriber thread. As was known in the art, this would have advantageously allowed for the second server to initiate an update of the first and third server in a timely fashion so that the first and third server would have the session state information needed when the customer sent a request to either the first or third server, (Allen, col. 4, lines 1-6). This also would have advantageously provided multithreaded processing in the first server, thereby enabling multi-tasking functionality, (Potts, col. 3, lines 63-65).

17. In considering claim 60, the modified teachings of Allen suggest wherein the update command is transmitted with the data relating to the updated session state to

the first server and the third server, (col. 4, lines 1-13). One of ordinary skill would modify the teachings of Allen for reasons indicated in considering claim 59.

18. In considering claim 61, Allen discloses wherein the act of creating the updated session state in the first server and the third server comprises modifying the first session state, (col. 4, lines 12 and 13).

19. In considering claim 62, Allen discloses wherein the act of creating the updated session state in the first server and the third server comprises deleting the first session state and adding the updated session state, (col. 4, lines 12 and 13).

20. In considering claims 63 and 66, Allen further discloses the servers must be able to communicate with each other and share session-state information, (col. 4, lines 5 and 6).

Although the teachings of Allen disclose substantial features of the claimed invention, they fail to expressly disclose: performing the act of transmitting data relating to the updated session state in response to a request for session state information.

Nevertheless, performing the act of transmitting data in response to a request was well known in the art at the time of the present invention. This is evidenced in the teachings of Potts where Potts discloses performing the act of transmitting data in response to a request, (col. 2, lines 41-47).

Thus, it would have been obvious to one of ordinary skill in the art to modify the teachings of Allen to expressly disclose performing the act of transmitting data relating to the updated session state in response to a request for session state information. As was known in the art, this would have advantageously allowed for the requesting servers to verify that they have the most recent/up to date session state information, so that the servers would have the session state information needed when the customer sent a request to the servers, (Allen, col. 4, lines 1-6).

21. In considering claim 64, Allen further discloses (a) transmitting an update to the second server and the third server, wherein at least a portion of the act of transmitting an update is performed by the first server, (col. 4, lines 1-13); and receiving the update, wherein the update is received by the second server and the third server, wherein the act of creating the first session state in the second server and the third server is performed in response to the update, (col. 4, lines 1-13).

Furthermore, Allen also discloses the servers must be able to communicate with each other and share session-state information, (col. 4, lines 5 and 6).

Although the teachings of Allen disclose substantial features of the claimed invention, they fail to expressly disclose: the update including a create command.

Nevertheless, an update including a create command was well known in the art at the time of the present invention. This is evidenced in the teachings of Potts where Potts teaches an update including a create command, (col. 2, lines 60-64, col. 3, lines 53-56).

Thus, it would have been obvious to one of ordinary skill in the art to modify the teachings of Allen to expressly disclose the update including a create command. As was known in the art, this would have advantageously allowed for the first server to initiate an update of the second and third server in a timely fashion so that the second and third server would have the session state information needed when the customer sent a request to either the second or third server, (Allen, col. 4, lines 1-6).

22. In considering claim 65, the modified teachings of Allen suggest wherein the create command is transmitted with the data relating to the first session state to the second server and the third server, (col. 4, lines 1-13). One of ordinary skill would modify the teachings of Allen for reasons indicated in considering claim 64.

23. In considering claim 67, the modified teachings of Allen suggest wherein the requested session state information is stored on the third server, the method further comprising sending the requested session state information to the first server in response to the request, wherein at least a portion of the act of sending the requested session state information to the first server is performed by the third server, (col. 4, lines 1-13). One of ordinary skill would modify the teachings of Allen for reasons indicated in considering claim 66.

24. In considering claim 68, the modified teachings of Allen suggest wherein the act of sending the requested session state information further comprises sending the

requested session state information to the second server, (col. 4, lines 1-13). One of ordinary skill would modify the teachings of Allen for reasons indicated in considering claim 66.

25. In considering claim 69, the modified teachings of Allen suggest (a) responding to the request for session state information, wherein the act of responding to the request for session state information is performed by at least one of the second server or the third server, wherein the requested session state information is stored on one or more responding servers, (col. 4, lines 1-13); (b) getting the requested session state information from at least one of the one or more of the responding servers having the requested session state information, wherein at least a portion of the act of getting the requested session state information is performed by the first server, (col. 4, lines 1-13). One of ordinary skill would modify the teachings of Allen for reasons indicated in considering claim 66.

26. In considering claim 70, the modified teachings of Allen suggest wherein the requested session state information is not stored on the third server, wherein the requested session state information is stored on the second server, the method further comprising: (a) determining that the session state information is not stored on the third server, (col. 4, lines 1-13); and (b) requesting the requested session state information from the second server, wherein at least a portion of the act of requesting the requested session state information is performed by the third server, (col. 4, lines 1-13). One of

ordinary skill would modify the teachings of Allen for reasons indicated in considering claim 66.

27. In considering claim 74, Allen discloses wherein the act of creating a first session state for a customer includes creating a session state ID, wherein the session state ID is associated with the customer, (col. 1, lines 24-37, and col. 4, lines 1-6).

28. In considering claim 75, Allen discloses receiving the session state ID from the customer, wherein the session state ID is received by the second server, and wherein the updated session state is associated with the session state ID by the second server, (col. 1, lines 24-37, and col. 4, lines 1-13).

29. In considering claim 76, Allen discloses wherein the first session state is associated with an interaction between the customer and the first server, wherein the updated session state is associated with an interaction between the customer and the second server, (col. 4, lines 1-13).

30. In considering claim 77, Allen discloses storing a plurality of session states in each server of the server group, (col. 4, lines 1-11).

31. In considering claim 78, Allen discloses wherein each server of the server group coordinates session states it transmits with session states it receives from other servers of the server group, (col. 4, lines 1-11).

32. In considering claim 79, Allen discloses wherein the first interaction and the second interaction relate to a single business transaction with the customer, (col. 3, line 64-col. 4, line 6).

33. In considering claim 80, Allen discloses wherein the business transaction relates to the selection of a product by the customer, (col. 2, lines 57-60).

34. In considering claim 81, Allen discloses wherein the first interaction and the second interaction relate to more than one business transaction with the customer, (col. 3, line 64-col. 4, line 6).

35. In considering claim 82, Allen discloses wherein the first interaction and the second interaction relate to requests for data from the servers by the customer, (col. 2, lines 57-60).

36. In considering claim 83, Allen discloses wherein the customer is in communication with the server computer group via the Internet (114), (col. 2, lines 57-60, also see Fig. 1).



37. In considering claims 86 and 111, Allen discloses a system and a corresponding method for maintaining session state information in a computer server farm, the computer server farm comprising a plurality of servers (120), wherein each server of the server farm is configured to interact with a customer (110), the method comprising: (a) creating a first session state in a first server of the server farm, wherein the first session state is created in response to access of the first server by the customer, and wherein the first session state corresponds to a first interaction between the customer and the first server, (col. 2, lines 57-60 and col. 3, lines 52-57, also see Fig. 1); (b) transmitting the first session state to a first plurality of servers of the server farm, wherein the first plurality of servers of the server farm includes a second server, (col. 4, lines 1-6); (c) receiving the first session state in response to the act of transmitting the first session state, wherein the first session state is received by each server of the first plurality of servers of the server farm, (col. 4, lines 1-6); (d) making at least one copy of the first session state, wherein the act of making at least one copy of the first session state is performed in each server of the first plurality of servers, (col. 4, lines 1-11); (e) creating an updated session state in the second server, wherein the act of creating an updated session state comprises using updating information to update the first session state, wherein at least a portion of the updating information is received by the second server from the customer, wherein the updating information corresponds to a second interaction between the customer and the second server, wherein the second interaction is subsequent to the first interaction, (col. 4, lines 1-13); (f)

transmitting the updating information to a second plurality of servers of the server farm, wherein the second plurality of servers of the server farm includes the first server of the server farm, (col. 4, lines 1-13); (g) receiving the updating information in response to the act of transmitting the updating information, wherein the updating information is received by the second plurality of servers of the server farm, (col. 4, lines 1-13); and (h) updating the first session state in the second plurality of servers of the server farm in accordance with the received updating information to create the updated session state in the second plurality of servers, (col. 4, lines 1-13).

Furthermore, Allen also discloses the servers must be able to communicate with each other and share session-state information, (col. 4, lines 5 and 6).

Although the teachings of Allen disclose substantial features of the claimed invention, they fail to expressly disclose: the transmitting comprising broadcasting.

Nevertheless, transmitting comprising broadcasting was well known in the art at the time of the present invention.

Thus, it would have been obvious to one of ordinary skill in the art to modify the teachings of Allen to expressly disclose the transmitting comprising broadcasting. As was known in the art, this would have advantageously allowed for sending the session state information to a plurality of servers at once, (Allen, col. 4, lines 1-6).

Although the modified teachings of Allen disclose substantial features of the claimed invention, they fail to expressly disclose: sending the first session state via a fact publisher thread executing locally on the first server, or receiving the updating information via a subscriber thread executing locally on the first server.

Nevertheless, publisher threads and subscriber threads were well known in the art at the time of the present invention. This is evidenced in the teachings of Potts where Potts discloses a command publisher thread used by a client to communicate with a server that will handle a command from the client, (col. 3, lines 24-27, col. 4, lines 25-47), and a server subscriber thread for receiving updating information for a file being edited by a client, (col. 2, lines 60-64, col. 3, lines 53-56).

Thus, it would have been obvious to one of ordinary skill in the art to modify the teachings of Allen to expressly disclose sending the first session state via a fact publisher thread executing locally on the first server, or receiving the updating information via a subscriber thread executing locally on the first server. As was known in the art, this would have advantageously provided multithreaded processing in the first server, thereby enabling multi-tasking functionality, (Potts, col. 3, lines 63-65).

38. In considering claim 87, the modified teachings of Allen further suggest (a) broadcasting an update to the first plurality of servers of the server farm, wherein at least a portion of the act of broadcasting an update is performed by the first server, (col. 4, lines 1-13); and receiving the update, wherein the update is received by the first plurality of servers, and wherein the act of making at least one copy of the first session state in each server of the first plurality of servers is performed in response to the update, (col. 4, lines 1-13).

Furthermore, Allen also discloses the servers must be able to communicate with each other and share session-state information, (col. 4, lines 5 and 6).

Although the modified teachings of Allen disclose substantial features of the claimed invention, they further fail to expressly disclose: the update including a create command.

Nevertheless, an update including a create command was well known in the art at the time of the present invention. This is evidenced in the teachings of Potts where Potts teaches an update including a create command, (col. 2, lines 60-64, col. 3, lines 53-56).

Thus, it would have been obvious to one of ordinary skill in the art to modify the teachings of Allen to expressly disclose the update including a create command. As was known in the art, this would have advantageously allowed for the first server to initiate an update of the second and third server in a timely fashion so that the second and third server would have the session state information needed when the customer sent a request to either the second or third server, (Allen, col. 4, lines 1-6).

39. In considering claim 88, the modified teachings of Allen suggest wherein the create command is broadcast with the first session state to the first plurality of servers of the server farm, (col. 4, lines 1-13). One of ordinary skill would modify the teachings of Allen for reasons indicated in considering claims 86 and 87.

40. In considering claim 89, the modified teachings of Allen suggest (a) broadcasting an update command to the second plurality of servers of the server farm, wherein at least a portion of the act of broadcasting an update command is performed

by the second server, (col. 4, lines 1-13); and (b) receiving the update command, wherein the update command is received by the second plurality of servers of the server farm, wherein the act of updating the first session state in the second plurality of servers of the server farm is performed in response to the update command, (col. 4, lines 1-13). One of ordinary skill would modify the teachings of Allen for reasons indicated in considering claim 86.

41. In considering claim 90, the modified teachings of Allen suggest wherein the update command is broadcast with the updating information to the second plurality of servers of the server farm, (col. 4, lines 1-13). One of ordinary skill would modify the teachings of Allen for reasons indicated in considering claim 86.

42. In considering claim 91, Allen discloses wherein the act of updating the first session state in the second plurality of servers of the server farm comprises modifying the first session state in each server of the second plurality of servers, (col. 4, lines 1-13).

43. In considering claim 92, Allen discloses wherein the act of updating the first session state in the second plurality of servers of the server farm comprises deleting the first session state and adding the updated session state in each server of the second plurality of servers, (col. 4, lines 12 and 13).

44. In considering claim 93, Allen further discloses the servers must be able to communicate with each other and share session-state information, (col. 4, lines 5 and 6).

Although the teachings of Allen disclose substantial features of the claimed invention, they fail to expressly disclose: broadcasting a request for session information from the servers of the server farm, wherein the act of broadcasting a request for session information is performed by a requesting server of the server farm.

Nevertheless, broadcasting a request for information was well known in the art at the time of the present invention.

Thus, it would have been obvious to one of ordinary skill in the art to modify the teachings of Allen to expressly broadcasting a request for session information from the servers of the server farm, wherein the act of broadcasting a request for session information is performed by a requesting server of the server farm. As was known in the art, this would have advantageously allowed for the requesting servers to verify that they have the most recent/up to date session state information, so that the servers would have the session state information needed when the customer sent a request to the servers, (Allen, col. 4, lines 1-6).

45. In considering claim 94, the modified teachings of Allen suggest wherein the act of broadcasting the updating information to the second plurality of servers is performed in response to the request for session information, (col. 4, lines 1-13). One

of ordinary skill would modify the teachings of Allen for reasons indicated in considering claims 86 and 93.

46. In considering claim 95, the modified teachings of Allen suggest sending the requested session information to the requesting server of the server farm, wherein the act of sending the requested session information to the requesting server is performed by at least one responding server of the server farm in response to the act of requesting session information, (col. 4, lines 1-13). One of ordinary skill would modify the teachings of Allen for reasons indicated in considering claim 93.

47. In considering claim 96, the modified teachings of Allen suggest (a) responding to the request for session information, wherein the act of responding is performed by one or more responding servers of the server farm, wherein the requested session information is stored on the one or more responding servers, (col. 4, lines 1-13); and (b) getting the requested session information from at least one of the one or more responding servers of the server farm, wherein at least a portion of the act of getting the requested session information is performed by the requesting server of the server farm, (col. 4, lines 1-13). One of ordinary skill would modify the teachings of Allen for reasons indicated in considering claim 93.

48. In considering claim 100, Allen discloses wherein the act of creating a first session state includes creating a session state ID, wherein the session state ID is associated with the customer, (col. 1, lines 24-37, and col. 4, lines 1-6).

49. In considering claim 101, Allen discloses receiving the session state ID from the customer, wherein the session state ID is received by the second server, and wherein the updated session state is associated with the session state ID by the second server and wherein the session state ID comprises (a) a first identifier, said first identifier identifying the first server, (col. 1, lines 24-37, and col. 4, lines 1-13); and (b) a second identifier, said second identifier comprising an indication of a location of the session state in a fact array stored locally on said second server, (col. 1, lines 24-37, and col. 4, lines 1-13).

50. In considering claim 102, Allen discloses wherein the first session state is associated with an interaction between the customer and the first server, wherein the updating information is associated with an interaction between the customer and the second server, (col. 4, lines 1-13).

51. In considering claim 103, Allen discloses storing a plurality of session states in each server of the server farm, wherein each server has more than one session state stored, (col. 4, lines 1-11).



52. In considering claim 104, the modified teachings of Allen suggest coordinating received session states and broadcast session states, wherein the act of coordinating is performed by each server of the server farm, wherein the received session states correspond to sessions state information received by the respective server from other servers, and wherein the broadcast session states correspond to session state information broadcast by the respective server to other servers, (col. 4, lines 1-11). One of ordinary skill in the art would modify the teachings of Allen for reasons indicated in considering claim 86.

53. In considering claim 105, Allen discloses wherein the first interaction and the second interaction relate to a single business transaction with the customer, (col. 3, line 64-col. 4, line 6).

54. In considering claim 106, Allen discloses wherein the business transaction relates to the selection of a product by the customer, (col. 2, lines 57-60).

55. In considering claim 107, Allen discloses wherein the first interaction and the second interaction relate to more than one business transaction with the customer, (col. 3, line 64-col. 4, line 6).

56. In considering claim 108, Allen discloses wherein the first interaction and the second interaction relate to requests for data from the servers by the customer, (col. 2, lines 57-60).

57. In considering claim 109, Allen discloses wherein the customer is in communication with the server computer group via the Internet (114), (col. 2, lines 57-60, also see Fig. 1).

58. In considering claim 112, Allen discloses a system for maintaining session state information among a plurality of servers (120), the system comprising a plurality of servers (120), wherein each server of the plurality of servers is configured to communicate session state information to the other servers of the plurality of servers via a grapevine protocol, wherein the grapevine protocol permits maintenance of session state information relating to a customer (110) on the plurality of servers, and wherein the grapevine protocol further permits each server of the plurality of server to update the session state information relating to the customer, (col. 3, lines 52-57 and col. 4, lines 1-13, also see Fig. 1), and wherein the grapevine protocol is implemented by a set of instructions executing on each server from the plurality of servers, wherein said set of instructions configures each of said servers to: (a) maintain a locally stored fact array comprising a plurality of session states, (col. 3, lines 52-57 and col. 4, lines 1-13, also see Fig. 1).

Although the teachings of Allen disclose substantial features of the claimed invention, they fail to expressly disclose: executing a plurality of threads comprising: a publisher thread to transmit the state information to the plurality of servers, and a subscriber thread to receive the published state information.

Nevertheless, executing publisher threads and subscriber threads was well known in the art at the time of the present invention. This is evidenced in the teachings of Potts where Potts discloses executing a command publisher thread used by a client to communicate with a server that will handle a command from the client, (col. 3, lines 24-27, col. 4, lines 25-47), and a subscriber thread used by the server to receive the published information, (col. 3, lines 53-56).

Thus, it would have been obvious to one of ordinary skill in the art to modify the teachings of Allen to expressly disclose executing a plurality of threads comprising: a publisher thread to transmit the state information to the plurality of servers, and a subscriber thread to receive the published state information. As was known in the art, this would have advantageously provided multithreaded processing in the first server, thereby enabling multi-tasking functionality, (Potts, col. 3, lines 63-65).

59. Claims 71-73, 97-99, are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen in view of Potts and further in view of Shaheen et al. (hereinafter Shaheen), U.S. Patent, 5,434,994.

60. In considering claims 71 and 97, although the teachings of Allen disclose substantial features of the claimed invention, they fail to expressly disclose: transmitting/broadcasting a heartbeat message to the servers of the server group/farm, wherein the act of transmitting/broadcasting a heartbeat is performed by at least one of servers of the server group/farm.

Nevertheless, transmitting/broadcasting a heartbeat message was well known in the art at the time of the present invention. This is evidenced in the teachings of Shaheen where Shaheen discloses transmitting/broadcasting a heartbeat message to servers of a server group/farm, wherein the act of transmitting/broadcasting a heartbeat is performed by at least one the servers of the group/farm, (col. 5, line 62- col. 6, line 2).

Thus, it would have been obvious to one of ordinary skill in the art to modify the teachings of Allen to expressly disclose transmitting/broadcasting a heartbeat message to the servers of the server group/farm, wherein the act of transmitting/broadcasting a heartbeat is performed by at least one of the servers of the server group/farm. As was known in the art, this would have advantageously allowed for detecting a failure of a server in the server group, and updating the failed server when the server recovers, (Shaheen, col. 5, line 62- col. 6, line 2).

61. In considering claims 72 and 98, Shaheen discloses wherein the act of transmitting/broadcasting a heartbeat message is performed periodically, (col. 5, line 62- col. 6, line 2). One of ordinary skill in the art would modify the teachings of Allen with Shaheen for reasons indicated in considering claims 71 and 97.

62. In considering claims 73 and 99, although the teachings of Allen disclose substantial features of the claimed invention, they fail to expressly disclose: (a) transmitting a heartbeat request to one or more servers of the server group/farm, and (b) receiving a heartbeat from at least one of the one or more servers of the server group/farm in response to the heartbeat request.

Nevertheless, transmitting a heartbeat request to one or more servers of a server group/farm, and receiving a heartbeat from at least one of the one or more servers of the server group in response to the heartbeat request was well known in the art at the time of the present invention. This is evidenced in the teachings of Shaheen where Shaheen discloses (a) transmitting a heartbeat request to one or more servers of a server group/farm, (col. 6, lines 9-12); and (b) receiving a heartbeat (i.e. replica) from at least one of the one or more servers of the server group in response to the heartbeat request, (col. 6, lines 12-14).

Thus, it would have been obvious to one of ordinary skill in the art to modify the teachings of Allen to expressly disclose transmitting a heartbeat request to one or more servers of the server group, and receiving a heartbeat from at least one of the one or more servers of the server group in response to the heartbeat request. As was known in the art, this would have advantageously allowed for detecting a recovery from failure of a server in the server group, and updating the failed server when the server recovers, (Shaheen, col. 6, lines 9- 14).

63. Claims 84, 110, are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen in view of Potts and further in view of Choquier et al. (hereinafter Choquier), U.S. Patent, 5,951,694.

64. In considering claims 84 and 110, although the teachings of Allen disclose substantial features of the claimed invention, they fail to expressly disclose: the servers of the server group are coupled by a local area network.

Nevertheless, coupling servers of a server group by a local area network was well known in the art at the time of the present invention. This is evidenced in the teachings of Choquier where Choquier discloses coupling servers (120) of a server group (104) by a local area network (122), (col. 5, lines 18-21).

Thus, it would have been obvious to one of ordinary skill in the art to modify the teachings of Allen to expressly disclose the servers of the server group are coupled by a local area network. As was known in the art, this would have advantageously allowed for the servers of the group to communicate with each other through a high speed network dedicated to the group of servers, (Choquier, col. 5, lines 18-21, and col. 5, line 56-col. 6, line 7, also see Allen, col. 4, lines 5 and 6).

### ***Conclusion***

65. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please see form PTO-892.

66. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HASSAN PHILLIPS whose telephone number is (571)272-3940. The examiner can normally be reached on Mon-Fri (8am-5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on 571-272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hassan Phillips/  
Examiner, Art Unit 2151